Community 2020 Demonstration Guide

for Community Builders & Public Trust Officers

Five years ago, the Department of Housing and Urban Development faced an informational crisis--its project development had become so extensive, it could give little detail on where it worked, how much it spent, or how much it received in investment returns. Community 2020 planning software solved the problem. Born of the management reforms undertaken by Secretary Andrew Cuomo and the partnership of HUD and Caliper Corporation, C2020 provides valuable mapping and policy assistance, for through it, HUD can supply informative answers in both written and illustrated form. In fact, Community 2020 builds on HUD's Consolidated Planning Initiative, which received the *Innovations In American Government Award in 1996* from the Ford Foundation and Harvard's Kennedy School of Government.

HUD's Office of Community Connections released Community 2020™ planning software in 1997. This geographic information software (GIS) helps users perform various useful tasks, including:

- Creating colorful maps of any neighborhood, city, county, or State in the U.S. in order to show detailed map layers such as congressional districts, roads, bodies of water, HUD housing projects, points of interest, census tracts, etc.
- Highlighting any area within the U.S. and getting an array of past and projected Census data as well as detailed information regarding how HUD has funded programs within that area.
- Opening a database file of property addresses and illustrating their locations in colorful, informative maps.
- Selecting any point of interest, road, body of water, etc., throughout the U.S. and determining income levels, racial make-ups, and gender percentages of a population within, for example, 500 meters, 3 kilometers, or 50 miles of these points.

Users rave about the software. Nearly 6,000 parties in the government, private, and non-profit sectors have received and use C2020 software--there are so many ways to utilize this program! For instance, various HUD offices use C2020 to view and print maps illustrating how and where HUD grant moneys have been spent throughout the 1990's, and state and local governments nationwide not only use it to prepare Consolidated Plans and Action Plans, but also to focus on revitalizing their jurisdictions. And they aren't the only ones benifiting from the program:

Public housing authorities (PHA) nationwide find C2020 a potential tool for completing their annuals housing plans electronically. This is because C2020 contains information regarding every PHA, including its funding allocation, number of low-rent and Section 8 units, total renter populations, and number of units designated for the elderly and handicapped. This software also graphically illustrates the number and location of each housing development and provides detailed tenant characteristics such as average incomes, percentages of disabled and elderly households, and racial percentages.

Non-profit groups use C2020 to help develop under-served communities. For example, the Mon Valley Providers Council, a non-profit organization in Pennsylvania, uses the software to map available early childhood services and help link the services to needy families. Another non-profit entity, the Los Angeles Community Design Center, applies the software by evaluating the need, interest and feasibility for developing affordable housing within the service areas of two Southern California hospitals.

Other **Government agencies** have found C2020 planning software valuable for solving problems within their offices, for its unique "geocoding" feature enables users to import and organize data in the software. Then, locations of homes, crime locations, loans, dump sites, and other raw data can be transformed into colorful, dramatic map layers which can be displayed in maps for informational meetings and conferences.

This remarkable software is available to all buyers at the remarkably low price of $249.00 for individual regions and $299.00 for the whole country. These prices more than favorably compare with the cost of competing geographic mapping software packages, for most are **twice** the price of C2020, and many users familiar with competing software packages agree C2020 is much easier to understand.

All in all, C2020 is a unique, inexpensive tool helping forge valuable bonds between many different parties that desire to improve our communities. Its uses and effects are nearly limitless.

Need Some Help?

If you need assistance with a C2020 software topic, try using the software's **Help feature** at the far right of the Main Menu. Another way to access this tool is to **Select HUD, On-Line Help** from the same Main Menu. Clicking on either of these resources will yield menus from which you can obtain information and assistance on a variety of topics. In addition, call 1–800–998–9999, the software's help desk, during normal business hours. You may also order additional copies of the software by calling this number.

Would you like more information from the Web about classes in the software or perhaps downloading updated data? Visit us at:

www.hud.gov/cpd/2020soft.html

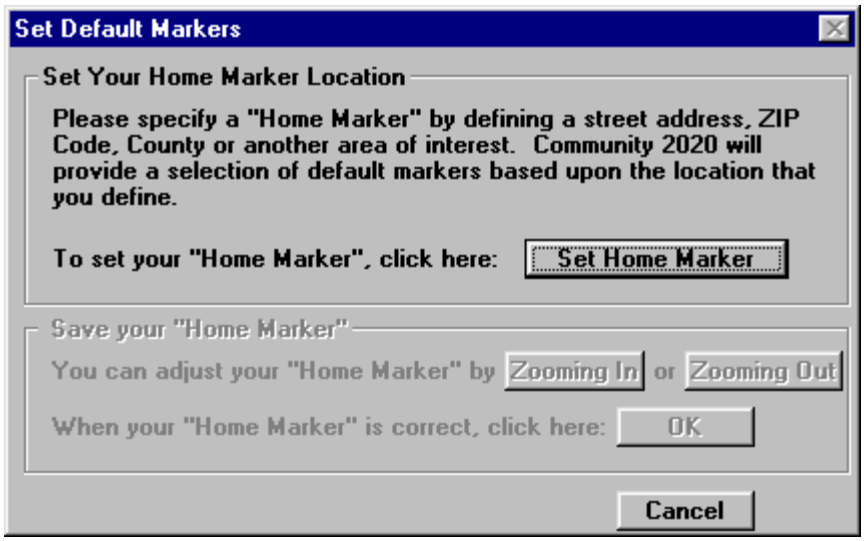
Speaking of web sites, HUD encourages users to visit the following site also, at which users will gain access to the Federal Programs Guide:

http://www.caliper.com/misc/hud/fed-help/fed_help.html

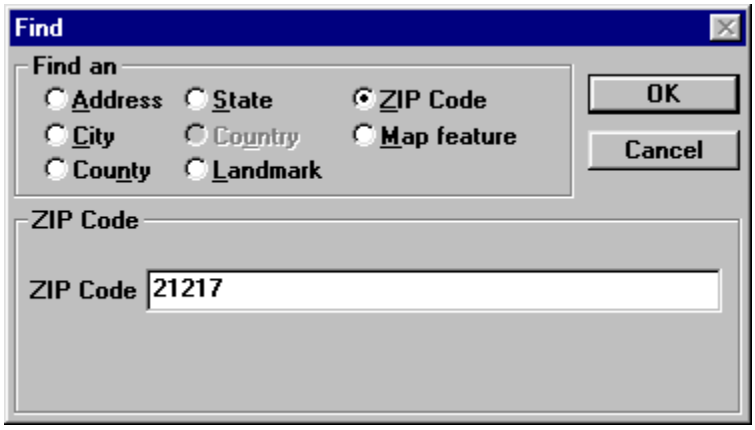
This Guide has a vast array of information on how citizens and businesses can receive various assistance from different Government agencies.

Opening and Using C2020 Planning Software

When you first open C2020, one of the first windows you will see is the following one asking you to set the home marker (Note: if you have opened the software already, you can obtain this window by clicking on HUD, Markers from the main menu and then selecting Defaults):

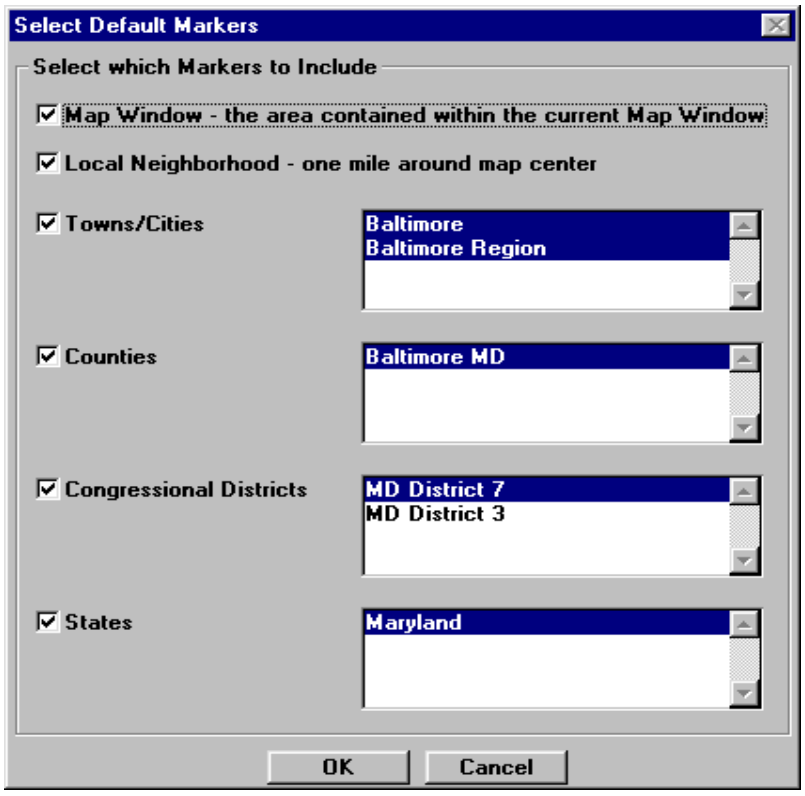


The Home Marker serves as the central location for opening and establishing the foundation for any map. **Click on the Set Home Marker button.** The Find dialog box will appear, and you will see you can set your marker by address, city, county, state, etc. In this example, you will use a ZIP Code in the Baltimore area as your home marker. (***Note***: you will need to select a different Zip Code if you have C2020 software covering a different U.S. region.) **Click on the ZIP Code button and type "21217" at the ZIP Code prompt** in the lower part of the Find dialog box, as shown below:



Click OK. The computer will begin to draw a map focusing on ZIP Code 21217 as the geographic region. The Set Default Markers dialog box will re-appear. You have the options at this point to reset the home marker to a different location, but let's click OK to accept ZIP Code 21217 as the home marker. ***Click OK.***

The Select Default Markers dialog box appears, as illustrated below. This window provides additional information for your selected Home Marker (the city, county, State, and congressional district). For example, based on the selection of ZIP Code 21217 as your home marker, C2020 has selected Baltimore as the city marker, Baltimore County as the county marker, and Maryland Congressional Districts 3 and 7 as the congressional district markers. When multiple options are available, you can select just one of the markers or hold down the shift key to select all of them. ***Click OK*** to accept these defaults.



Renaming a Marker

After selecting OK, you will see the gray C2020 startup screen. Don't worry--this indicates that your home and default markers have been set.

The software allows you to do many things with markers. You can add and drop markers, change the order in which the markers are listed ("Move Up" and "Move Down"), and rename markers. Rename your home marker as follows:

Select the markers tool  **or select HUD, Markers,** from the Main Menu from the HUD toolbox. The Markers dialog box illustrated below will appear listing the markers you selected earlier. In this dialog box, **click on Home Marker Window and click on Rename,** as shown below:

The Rename Marker dialog box will be displayed. Type **"My neighborhood"** as the new name for the home marker window:

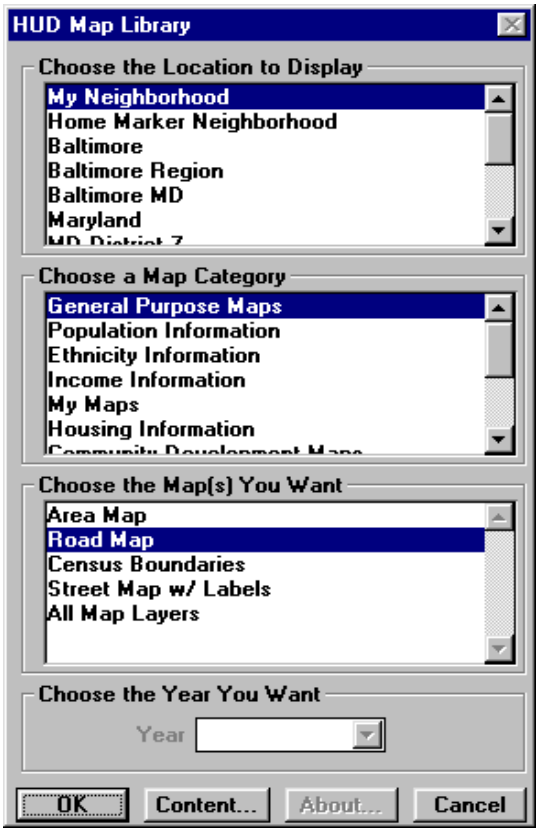
Click OK.

The new name is saved and you return to the Marker Locations dialog box. The name "My Neighborhood" has replaced "Home Marker Window." ***Click on the Close button.*** Your home marker (now named "My neighborhood") is now automatically saved.

Testing Your Marker

Now try out the Marker that you just created. To do this, you open a map from the Map Library, which contains dozens of premade maps, and choose the My Neighborhood marker.

Click on the Map Library button  in the HUD toolbox.



Make the following selections to open a map:

- **Location: My Neighborhood**
- **Category: General Purpose Maps**
- **Map: Road Map**

Click OK.

The map you selected will appear, centered on the same geographic location and at the same scale as your My Neighborhood marker.

The Pan and Zoom Tools

The **Pan tool:**

You can use the **Pan tool**  to see areas slightly outside the boundaries of the map. **Click on this tool now. Now click on any point in your open map and drag the map in any direction. Now, release the mouse button.** C2020 will redraw the map showing a new geographic region and areas that were not previously visible.

The **Zoom In and Zoom Out tools:**

C2020 features the **Zoom Out Tool**  , which enables users to change the view of the current map window to show much more geopgraphy. Also, C2020 features the **Zoom In Tool**  to change map views and make features on the earth's surface appear closer.

If you want to move from one location covered by your CD-ROM to another and the new location is not one of your markers, you can use the **Find tool**  . **Click on this tool now.** The Find dialog box will appear. Select another location of your choice (you must abbreviate State names), and ***click OK.*** A map of the new location will appear and will have the same map category type as the previous map. ***Click on File, Close*** from the Main Menu to close the open map.

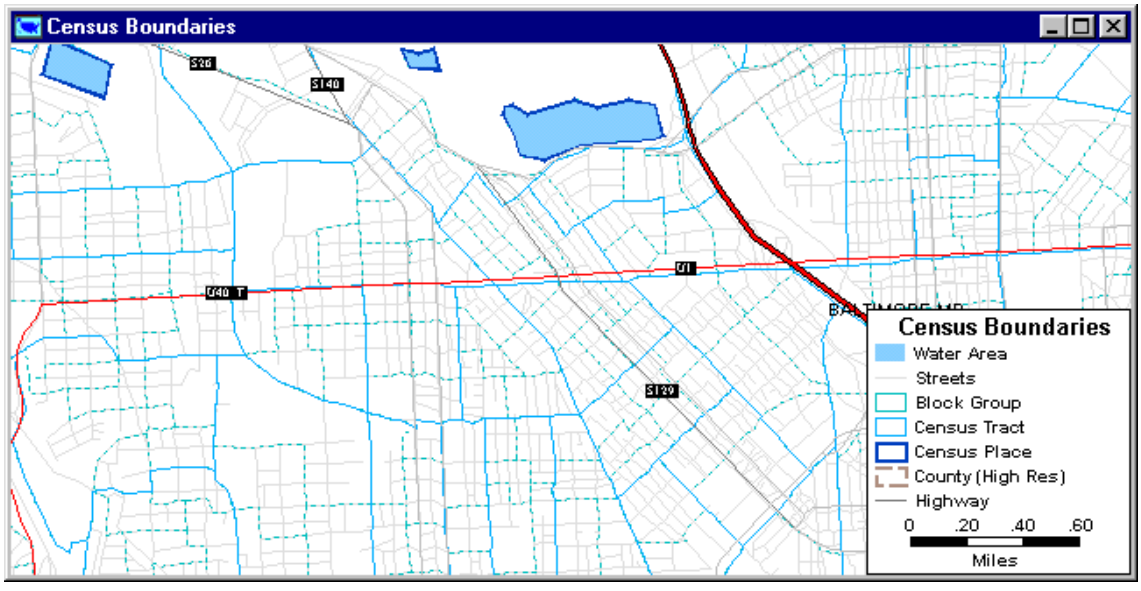
Layering Information on Your Neighborhood Map

Every map file is simply a collection of "layers" of different kinds of information about any location. There are three types of map layers: **areas, lines, and points** (for example, state, highways, and points of interest respectively).

Multiple layers are superimposed in a map like overhead transparencies.
Like transparencies, layers in a map file can be rearranged, added or dropped, renamed, or hidden, and they appear with the last layer "on top." Let's open another map and explore this concept further.

Your Steps:

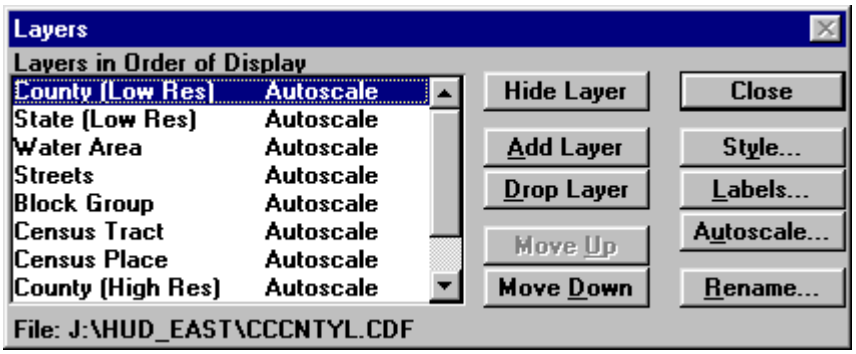
1. **Click on the Map Library button**  in the HUD toolbox, or **choose HUD, Map Library, from the Main Menu.** Select the following and click OK:
   - **Location: My Neighborhood**
   - **Category: General Purpose Maps**
   - **Map: Census Boundaries**



C2020 will draw a map that contains layers of census information, other layers to orient the user, and a legend listing the layers displayed. However, these aren't the only layers associated with the map--these are only the layers currently visible. To see all the maps layers, you need to view the Map Layers dialog box.

Map Layers Dialog Box

2. **Click on the Map Layers button**  or **choose Map, Layers, from the Main Menu.** The Layers dialog box will appear:



This is the Map Layers dialog box. The left side lists all of the layers in the order in which C2020 places (stacks) them on the map. The working layer "County (Low Res)," as shown above, is highlighted in blue and was the first layer C2020 placed on this map.

The **working layer** is a very important concept in the software. Any change you make to the map is done through it, for it's the active layer, so any tool activated will operate on that layer.

Below the list of layers, you will see **"File:"** followed by the file name of the working layer. Each layer is stored on its own geographic file; this part of the Map Layers dialog box indicates the computer file name of each layer and where each is stored.

C2020 has three tools to help change the presentation of layers:

1. **Hide Layer:** Click on this to remove VISIBLE information. The layer is now hidden, although it's still part of the map and listed in the layers box.

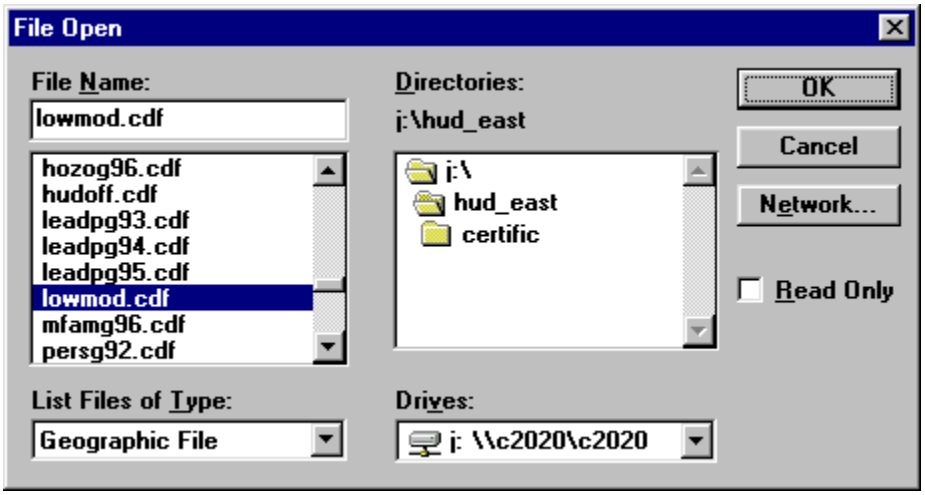
2. **Drop Layer:** Click on this to remove a layer from sight AND from your layers list. It removes a layer completely from the map.

3. **Add Layer:** Click on this to add a layer stored on its own geopgraphic file.

EXAMPLE OF ADDING A LAYER

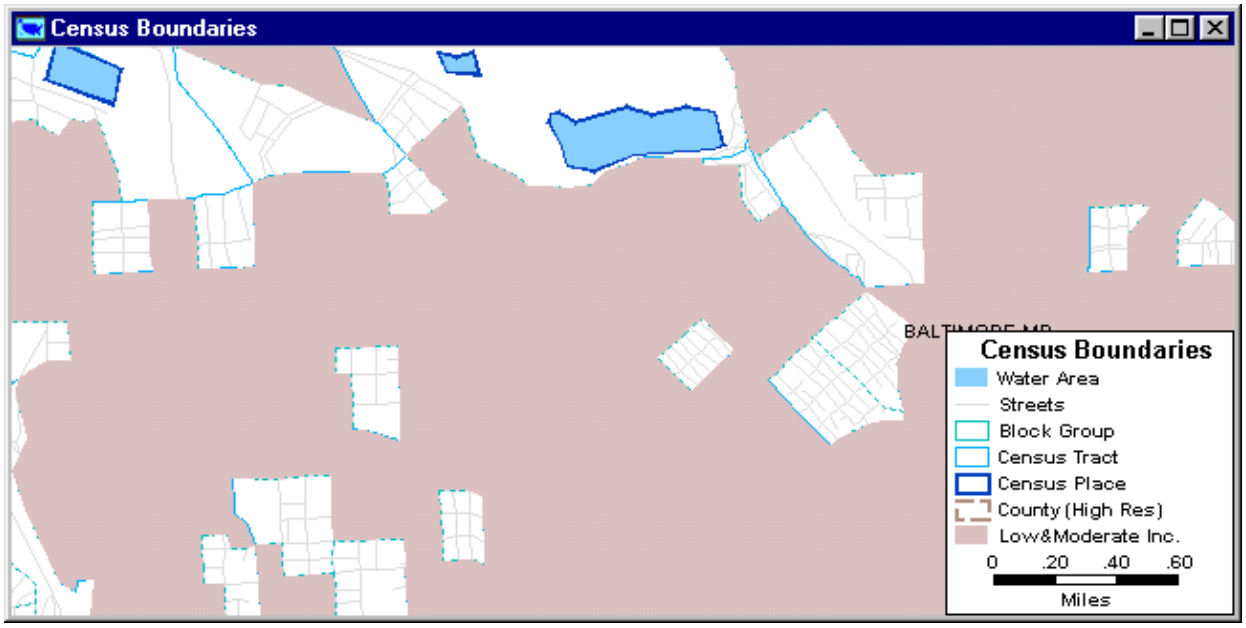
3. **Click on the Map Layers tool**  or **select Map, Layers, from the Main Menu** to return to the Layers dialog box. Now we'll add a new layer to the map from a file on the CD-rom.

4. **Click on the Add Layers button.** When you click on the Add Layers button, C2020 brings up the File Open dialog box, for each layer is stored on its own geographic file. When you open the file, it is added to the map.



5. In the File Open dialog box, **select the drive where the software's geographic files are stored** (in most cases this will be the CD-ROM). Scroll through the list of geographic files and **select lowmod.cdf to add a layer displaying low & moderate-income areas. *Click OK.*** The software will return to the Layers dialog box. ***Click on Close.***

6. **Click on the Map Layers tool.** When you add a layer to a map, it is placed at the bottom of the list--**scroll down to see it.** Low&Moderate Inc. now appears last. You will also see the name of the file that you added at the bottom of the box. ***Click on Close*** to return to the map and see the changes.



We see the Low&Moderate Inc. layer now on the map. You can't see many of the other point and line layers because the layer we just added covers area, contains color, and is hiding these other layers. The order of display of our map layers is incorrect for proper viewing. Let's change it to improve the map.

Layers in Order of Display

7. **Click on the Map Layers button**  or **select Map, Layers, from the Main Menu** to return to the Layers dialog box.

   Here, the layers are listed in order of display. When C2020 draws the map, it starts at the top of this list and draws the map layer by layer in the order listed. On this map, the last layer listed is Low&Moderate Inc, so when it was drawn, it covered the previous layers.

   To prevent one layer from hiding part of another, place area layers first on your map, then line layers, then point layers. This way, no point or line layers will be covered by area layers which may contain fill colors.

Changing the Order of Display

You use the **Move Up and Move Down buttons** to change the order of display.

8. **Click on the Low&Moderate Inc. layer** in the list to select it (you may have to scroll to the bottom of the list to find it). **Click on the Move Up button** until the Low&Moderate Inc. layer is listed first. **Click on the Close button.**

   The Low&Moderate Inc. layer is now drawn first with other area layers and the line and point layers drawn over it.

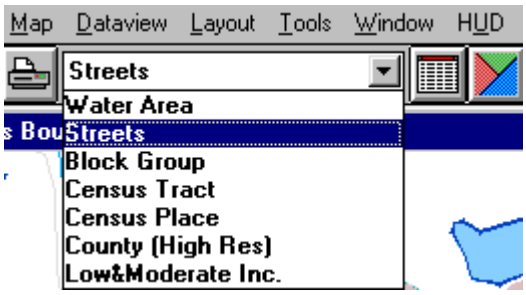
Using the Working Layer From the Main Toolbar

You made several changes to the map using the Map Layers dialog box. In each case you first selected the working layer, then used the appropriate tool to make your changes. But you don't need to open the Map Layers dialog box every time you want to change your map--you can select the working layer from the Main Toolbar and then use any of the tools available. In the following sections, you will use the Main Toolbar to select the appropriate working layer and use the Automatic Labels and the Style tools to change that layer.

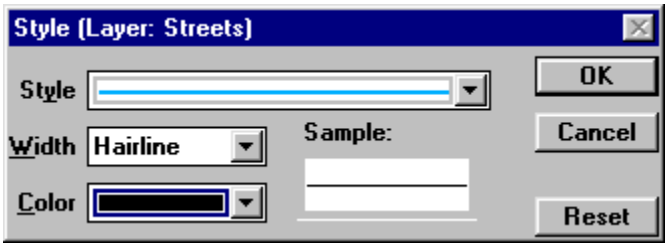
Styling a Layer

Even though the streets are now drawn on top of the Low and Moderate Income Areas, they're still difficult to see since both layers are presented in similar colors. You can use the **Style tool**  on the Main Toolbar to change the graphic style (color, width, etc) of the Streets layer. We will make Streets the working layer and change the style to a darker color.

9. **Click on the dropdown arrow on the right side of the Working Layer box,** located in the Main Toolbar. **Select Streets.**



10. **Click on the Style tool**  located in the Main Toolbar. Make the selections indicated below and ***click OK.***

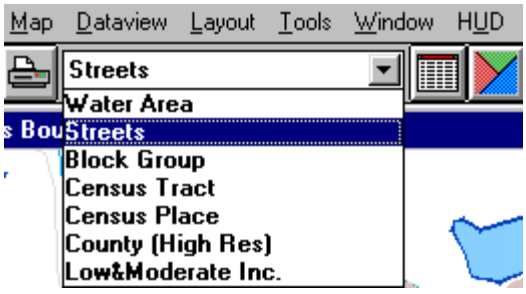


In the re-drawn map, the Streets are more visible, but you may want to label them to improve your sense of orientation.

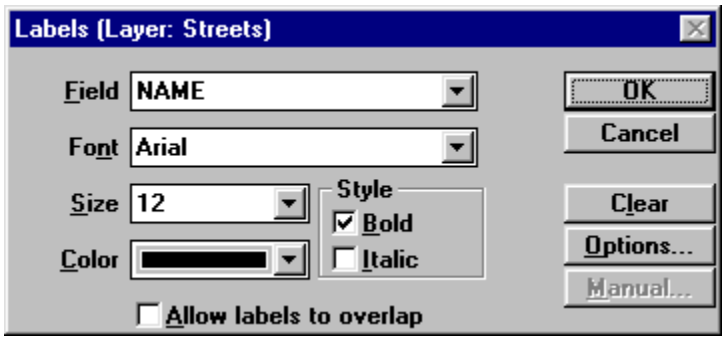
Labeling a Layer

C2020 provides two tools to label map features: **Automatic Labels**  and **Manual Labels**  . Since each layer is tied to its own database of attributable data, the Automatic Labels Tool draws on any of the fields from the database for labels. In this case you will use the Name field from the Streets database to label the streets.

11. **Make sure Streets is the working layer.**



Remember, to use the tools from the Main Toolbar or the Maptitude Toolbox, you have to first select the correct working layer. **Click on the Automatic Labels tool**  **. Make the selections indicated below.**



12. ***Click OK*** to return to the Layers dialog box, then ***click OK*** once more to return to your map and see the changes made.

    You can also use the Manual Labels Tool  located in the Maptitude Toolbox to label selected map features instead of the entire layer.

13. **Select Block Group in the Working Layer window.**

14. **Click on the Manual Labels tool**  in the Maptitude toolbox to activate it.

15. **Click once on a Block Group you would like to label.** The Manual Labels dialog box will appear. Select a field, such as Population, to label your Block Group. **Change the style of the label to your liking** and ***click OK.***

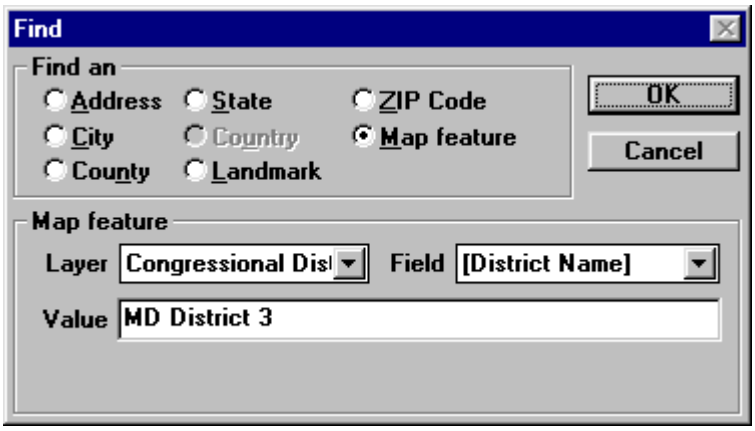
    Once a manual label is placed on the map, it becomes freehand text. You can edit freehand text with the **Pointer tool**  . Click on this tool now to make a sample edit to the manual label. Click once on the label to rotate it, move it to another location, or to change its size. You can double-click on the text to change its contents, size, color, font, and even to provide a frame around it. Close your map now by clicking **File, Close.**

Opening a map of a Congressional District

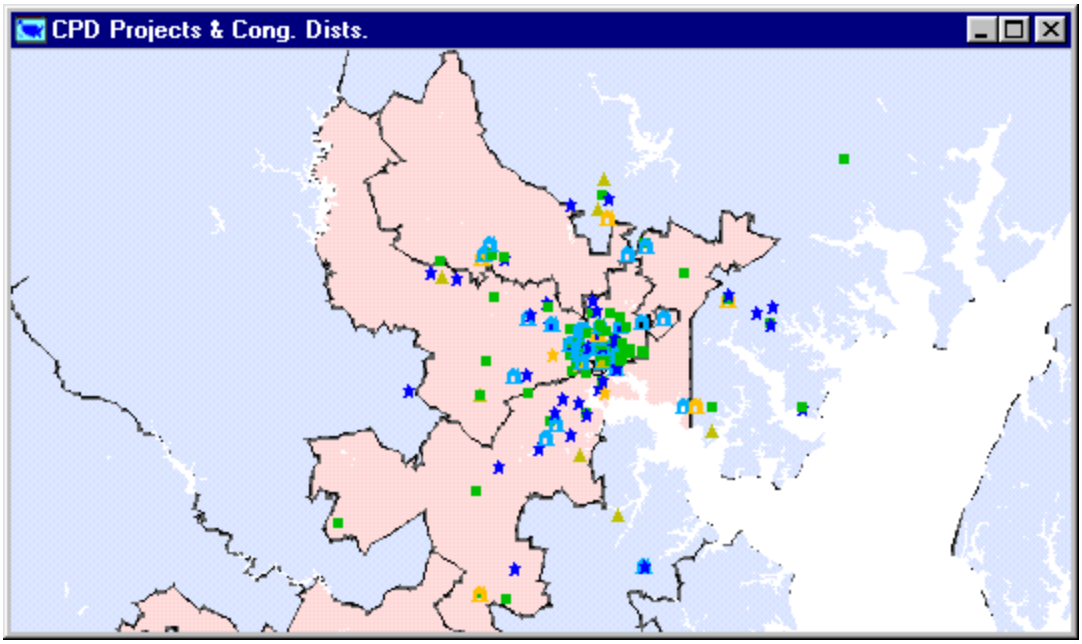
Your Steps:

1. You will now open a map of Maryland's third congressional district using the Map Library's **Other Location** as the marker. **Click on the Map Library tool**  and make the following selections:
   - **Location: Other Location**
   - **Category: Community Development Maps**
   - **Map: Projects & Congressional Districts**
   - **Year: 1997**

2. **Click on the Map Feature button in the Find dialog box and select Congressional District as the Layer and District Name as the Field; then type "MD District 3" as the Value as shown below:**



3. ***Click OK.*** A map centered on your chosen congressional district will appear, as shown below. Hide the map legend by clicking the **Show or Hide the Legend Button.**



Adding Freehand Text

4. You might want to add text to your map. Click on the **Freehand Text button** T. **Decide where you would like text to appear on your map, then click and drag a box appropriately sized to hold text on the map. Release the mouse button.** A text box will appear with a blinking cursor. **Type "Maryland Congressional Districts"** in the box and do'nt worry if the text appears too large for the box. **Press Enter on your keyboard.**

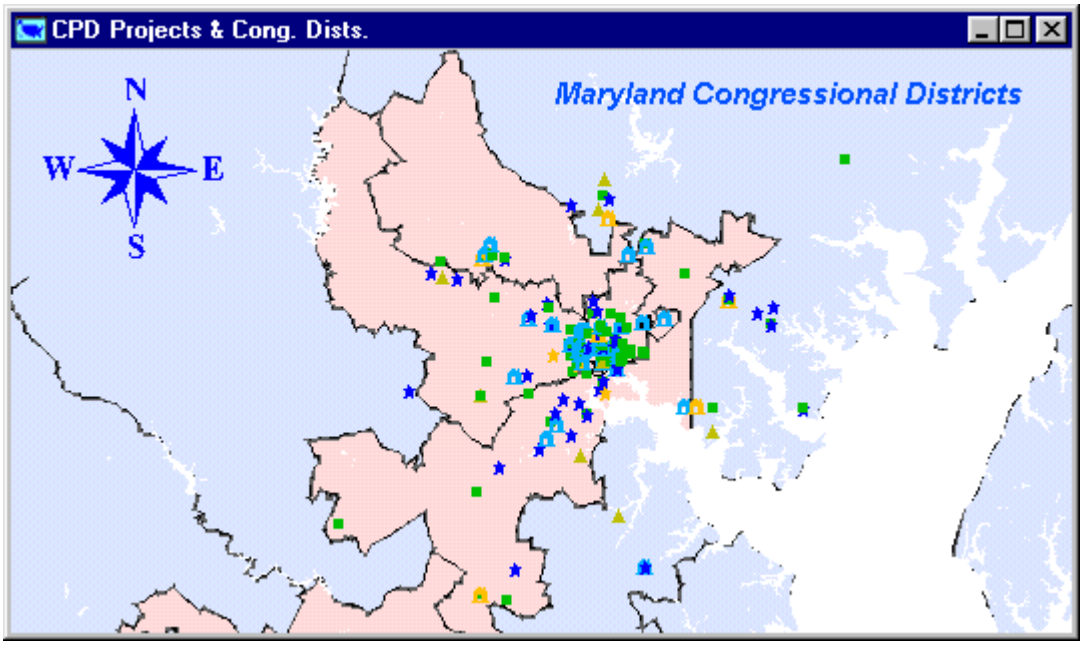
5. The text should appear on your map, but it may be too large. If you would like to make a change to the size, color, or font, **click on the Pointer Tool**  , **then double-click anywhere on your text.** Make any changes to these attributes, then ***click OK.***

6. If you wish to move the text elsewhere on the map, **click once on the text using the Pointer tool** and handles will appear around the text to show it's active. Without releasing the mouse, **click and drag the text to any other location on the map.** If you wish to delete any text**, click once on it to make it active using the Pointer tool and press Delete** when the handles appear around the text.

Adding a North Arrow

7. **Click on the North Arrow tool**  **. Click and drag a box appropriately sized to contain a North Arrow. Release the mouse** and **choose a style and color for the Arrow in the menu that appears. *Click OK.*** The North Arrow should appear on the map in the size, style, and color you chose.

Your map should look similar to the one shown below:



To change, move, or delete the North Arrow, use the **Pointer tool**  as you changed, moved, and deleted the text. Close your map by clicking **File, Close.**

Adding your own data to maps

Introduction

C2020 software allows you to import and illustrate your own data. This is fairly simple with C2020, since this software is compatible with most name brand database programs, including Lotus, FoxPro, and Microsoft Access and Excel.

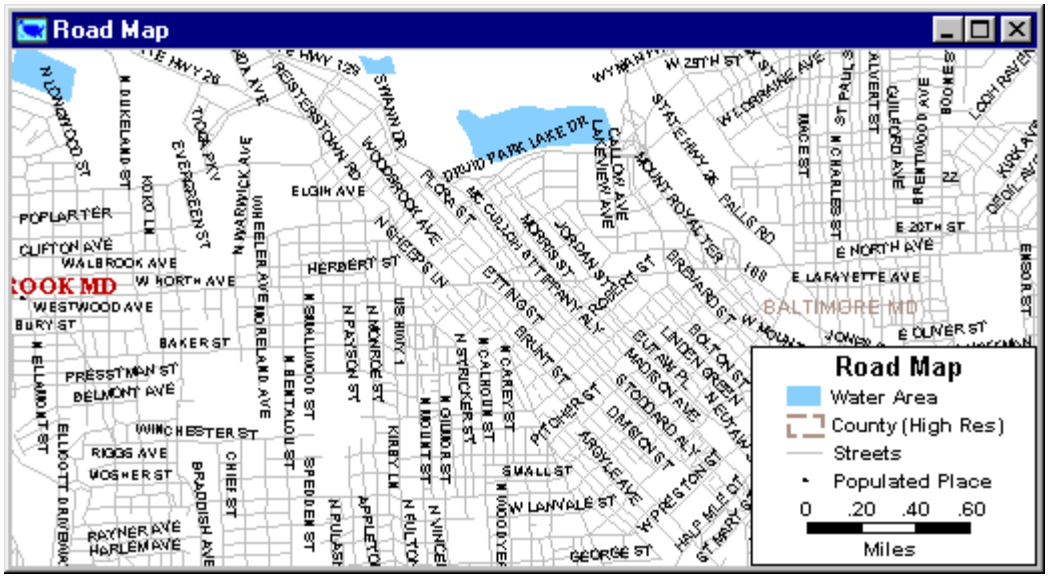
In the next exercise, you'll learn how to open a dBASE file containing a list of properties with addresses, and you will then turn this file into a map layer through a process called **"geocoding."**

Your Steps:

Before opening a dBASE file containing a list of properties for our home marker ("My Neighborhood"), open a map which contains streets where you will later place icons representing the locations of the properties.

1. **Open the following map:**
   - **Location: My Neighborhood**
   - **Category: General Purpose Maps**
   - **Map: Road Map**

The following map should appear:

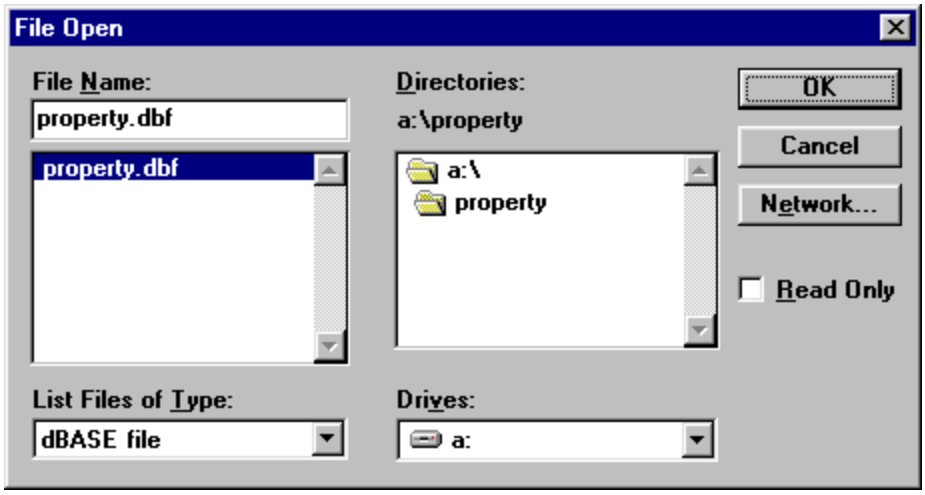


NOTE: The map has a "Streets" layer. It's important to open a map containing streets because you will use this layer when you "geocode," or add location information to your database records.

Opening Your Database File as a Table

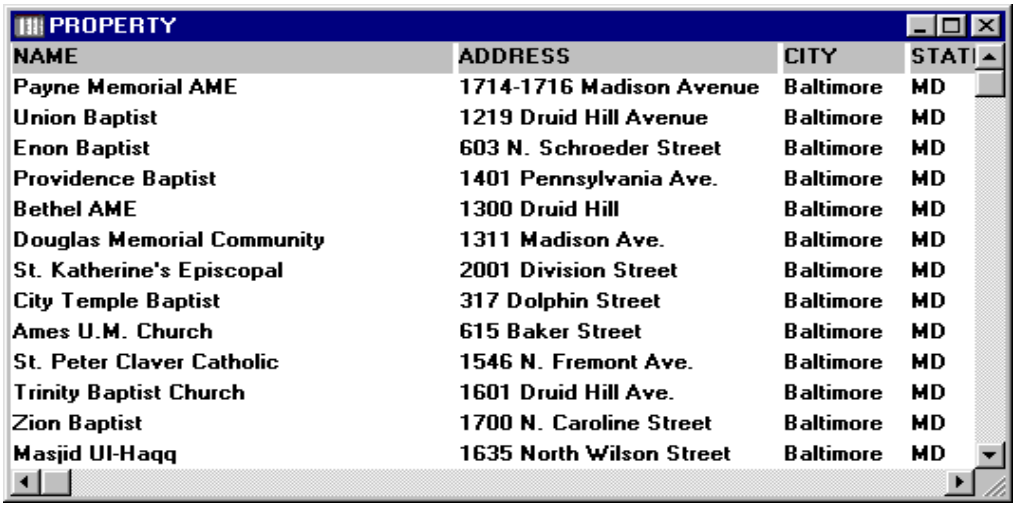
The next step is to open a file containing the table of local properties. First, you must know you can use C2020 to view and change just about any data in a table, whether it was stored in a spreadsheet or a database. The only requirement is that it be saved as a dBASE file (that is, a file with the suffix ".dbf"). This is a file format option in most spreadsheet programs.

2. **Choose File, Open.** The File Open dialog box appears. **Make the selections in this order, as shown below, to open the file which is stored on a floppy disc: Drive, Directory, List Files of Type, File Name.** If you need a sample database for the East or another region, go to the C2020 homepage **(www.hud.gov/cpd/2020soft.html)**, select the training manual link, and go to Chapter Three.



Click OK.

The **PROPERTY dataview window** appears:



PROPERTY

NAME	ADDRESS	CITY	STAT
Payne Memorial AME	1714-1716 Madison Avenue	Baltimore	MD
Union Baptist	1219 Druid Hill Avenue	Baltimore	MD
Enon Baptist	603 N. Schroeder Street	Baltimore	MD
Providence Baptist	1401 Pennsylvania Ave.	Baltimore	MD
Bethel AME	1300 Druid Hill	Baltimore	MD
Douglas Memorial Community	1311 Madison Ave.	Baltimore	MD
St. Katherine's Episcopal	2001 Division Street	Baltimore	MD
City Temple Baptist	317 Dolphin Street	Baltimore	MD
Ames U.M. Church	615 Baker Street	Baltimore	MD
St. Peter Claver Catholic	1546 N. Fremont Ave.	Baltimore	MD
Trinity Baptist Church	1601 Druid Hill Ave.	Baltimore	MD
Zion Baptist	1700 N. Caroline Street	Baltimore	MD
Masjid Ul-Haqq	1635 North Wilson Street	Baltimore	MD

Preparing Your Table

Now that you have opened the PROPERTY table as a database file in the software, the addresses are almost ready to be geocoded as points. (Remember, ***geocoding*** is the process of assigning each address in your table a latitude and longitude.) The software can then display an icon at the appropriate place on a map.

C2020 software will geocode property addresses if it has two pieces of information for each property in the table:

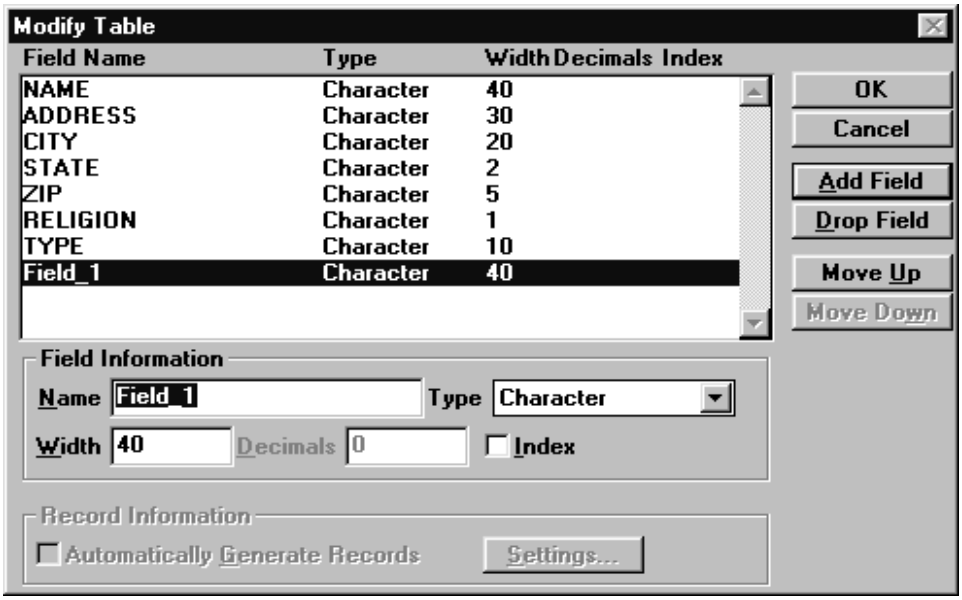
- **The Geographic location.** An address: as you can see, the PROPERTY table already has street address information.
- **A unique identifier.** The software has to keep each record in a table distinct from the others, so it needs a unique ID or serial number. But since the housing property entries do not have unique identifiers, you will have to add one to each. Fortunately, the software makes this easy to do.

Adding a Unique ID to Your Table

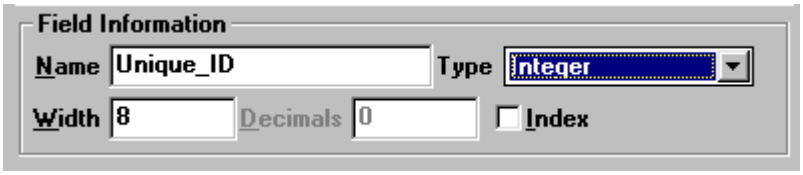
There are a number of ways to add unique identifiers to your table. Here, you will add a column of sequential numbers (1, 2, 3, etc.) to your table using the software's edit-fill feature.

3. **Choose Dataview, Modify Table** on the Main Menu.

4. The Modify Table dialog box appears. **Click the Add Field Button.**



5. In the lower portion of the Modify Table dialog box, **enter the Field Information, including a new field name, as shown below:**

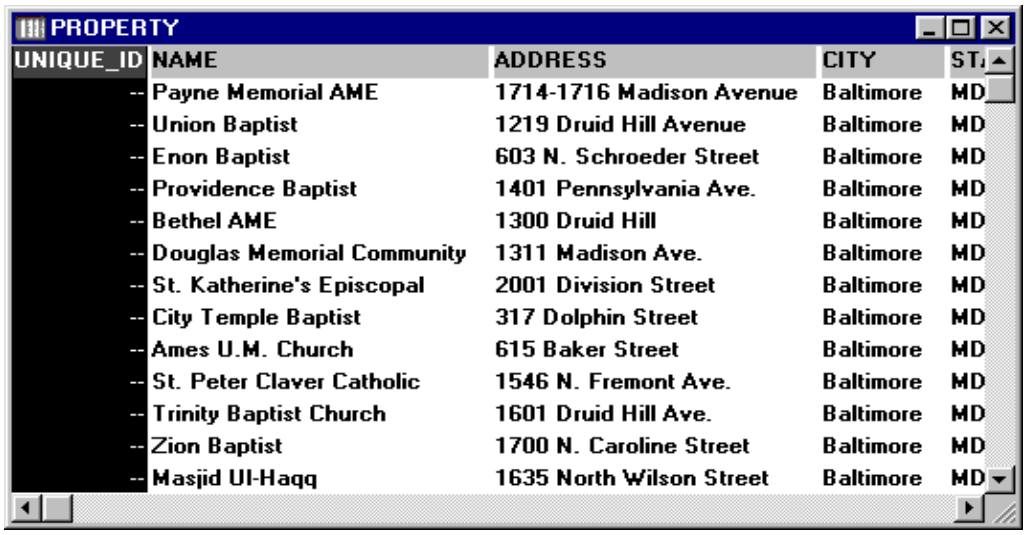


Don't click on OK yet! If you want to see your new column immediately to the left of the dataview table, the UNIQUE_ID field must be at the top of the list in the Modify Table dialog box.

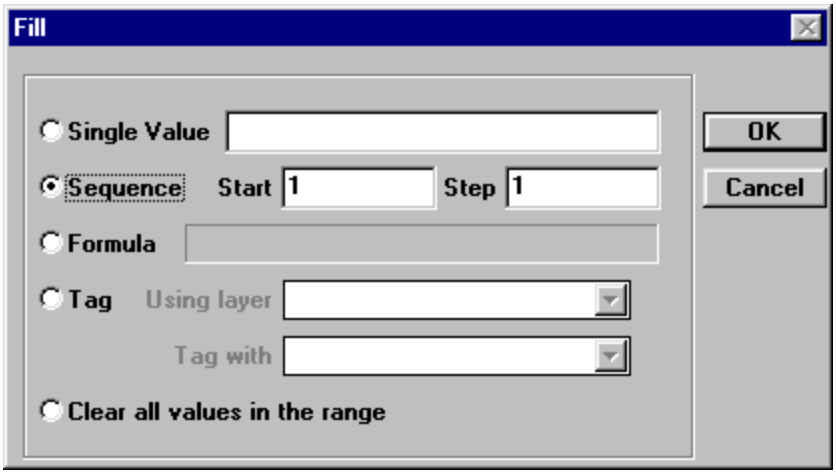
Right now, UNIQUE_ID is at the bottom of the Field information list. To fix this, use the Move Up button.

6. Make sure the UNIQUE_ID field is highlighted, then **click on the Move Up button** until the UNIQUE_ID field is at the top of the list. ***Click OK.*** The PROPERTY dataview now displays the UNIQUE_ID column you just added.

7. First **select the Unique ID column** by clicking once on the word "Unique_ID." Note that the entire column is selected:



8. **Choose Edit, Fill.** The Fill dialog box appears with options for your column settings. Click on **sequence,** and make sure **start** is 1 and **step** is 1. ***Click OK:***



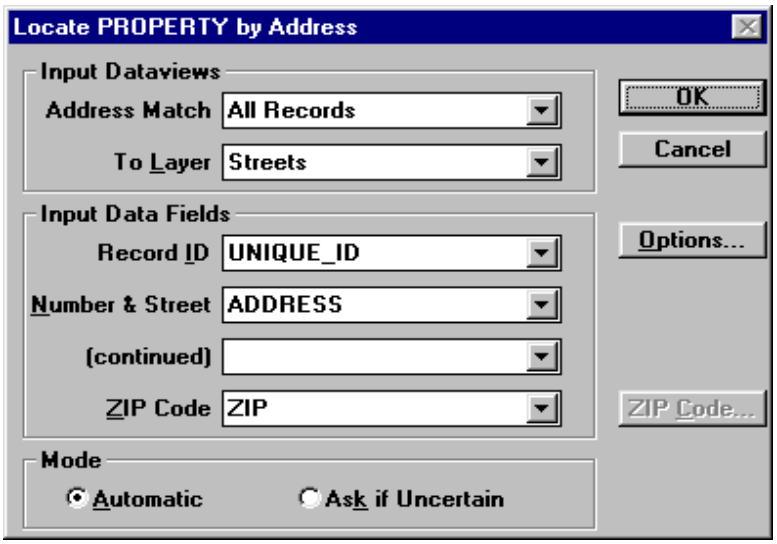
Note that each record now has a unique ID number in your revised table.

Creating a Map Layer by Geocoding Your Table

Now you are ready to geocode the data in your table. Once your table is geocoded, a new map layer is automatically created. Each housing property in your table will be represented by an icon on the new map layer.

9. **Choose Tools, Locate by Address.** The Locate PROPERTY by Address dialog box appears with the name of your table (see illustration on the following page). Since you want to match all of the entries in the table, **select All Records from the Address Match pulldown menu and select Streets on the To Layer pulldown menu** to look for matches in the Streets layer.

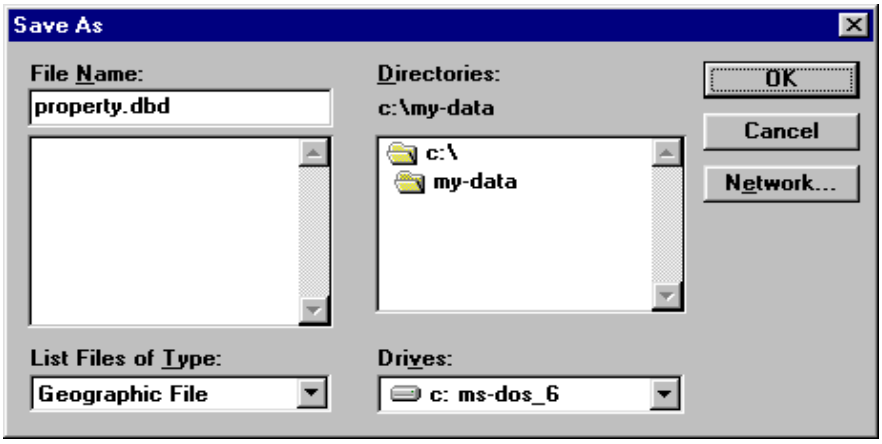
   In the Input Data Fields area of the dialog box, **select UNIQUE_ID as the Record ID.** This instructs the software to locate one property for each record in the UNIQUE_ID column. When finished, ***click OK.***



Saving the New Map Layer

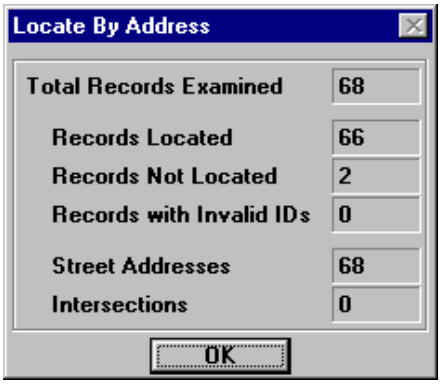
When you click OK, the Save As dialog box will appear, for you are being asked to save this new, automatically created layer displaying the locations of the geocoded records. Remember: you save the geocoded addresses as a standard geographic file with the ".dbd" extension. Geographic files with this extension can be modified, unlike those with ".cdf" (compact digital file) extensions.

10. **Save your layer as "property.dbd" by choosing the options indicated below:**



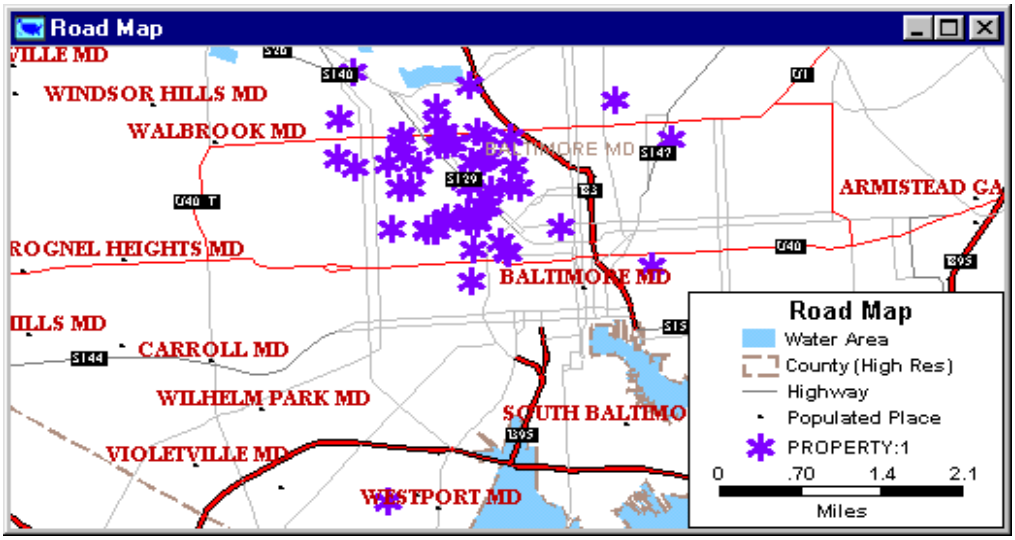
You will notice we have created a subdirectory called "my-data" using Windows Explorer. You can do this or save the file into another location. After you click OK in teh Save As Dialog box, you will see status bars showing the software's progress as it geocodes the records into databases.

11. When the software is finished, it will display a report of the located records, as illustrated below. In this dialog box, two property addresses in the Streets layer could not be located. This happens when the properties are missing valid property address information.



Looking at the New Map Layer

Return to your map by making it the active window *(click on Window, Road Map, from the Main Menu).* Notice the map legend shows the new map layer "PROPERTY:1," and there's a large asterisk for each address that could be found by referencing the Streets layer.



Changing the Color Theme

The 66 icons on the map represent the properties located during the geocoding process. Since there are four different types of properties among the 66 based on the Religion field within our table (M, C, J and Other), we can now assign four different styles of icons using the Color Theme MapWizard. We won't take the time to do this now, but we'll refer you to Chapter 3 of the C2020 software manual, which users can acess from the **C2020 Web page**:

www.hud.gov/cpd/2020soft.html

Using C2020 to access Census Data

C2020 enables users to view more than 600 census data elements for any area layer (such as block groups, states, cities, counties, census tracts, congressional districts) or for unique geographic regions chosen by the user.

Click on the Map Library button in the HUD toolbox and make the following selections to open a map of Montgomery County, Maryland (or a county of your choice):

- **Location: Other Location**
- **Category: General Purpose Maps**
- **Map: Road Map**

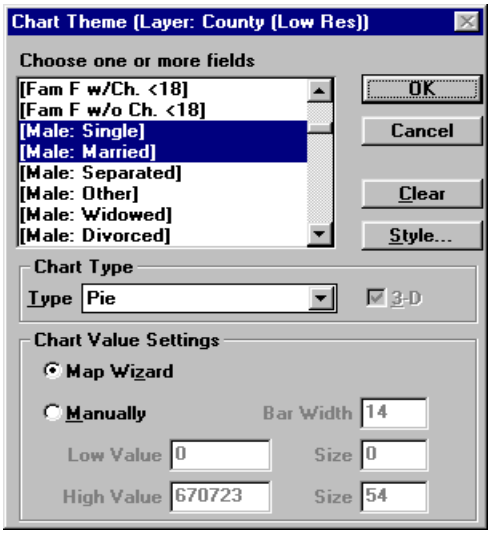
2. When the Find window appears, **click on the County button,** then **type "Montgomery, MD"** as the county name to open the county map.

Using the Select by Pointing Tool to Obtain Census Data

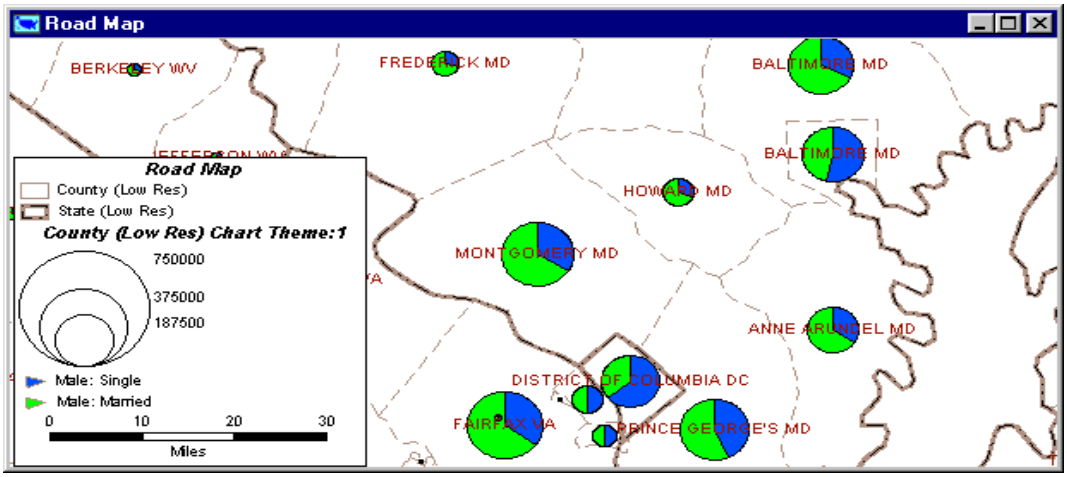
3. You can access census data for map layers by using the **Select by Pointing tool**  . To obtain census data for a county using this tool first make County (High Res) the working layer. Next **click on the Select by Pointing tool**  and then **click anywhere on the map in a county of your choice** (to select multiple counties, hold the shift key down while selecting). The selected county(ies) should turn red. **Now click on the New Dataview tool**  in the main toolbar. A table will appear listing census data for all counties in the Eastern region. Because you want to see the data only for Montgomery County (or for the county(ies) you selected), click on Selection in the Working Layer window. The contents of the table will change and you will see census data for only the selected county(ies). **Close this window without saving it and return to your map.**

Illustrating Themes Using Map Wizard Tools

4. C2020 includes tools to illustrate map themes. For example, you can use the **Chart Theme Map Wizard** to illustrate a comparison of different census data elements. To do this, **make sure that County (Low Res) is the working layer and change the map scale to 1:1,000,000 by clicking on the map scale tool in the Main Toolbar and selecting this ratio.** Also, hide the Interstate Highway layer by selecting the Map Layers Tool and using the Hide Layer button). Then **click on the Chart Theme Map Wizard**. A menu will appear to enable you to create a thematic map. **Make the selections illustrated as follows:**



Don't forget:to select two categories, you must hold down the shift key (or the control key if the two categories are not next to each other), then click both choices. ***Click OK*** and your thematic map will appear and look similar to the one below. Close this map.



Creating Bands and Using Overlays

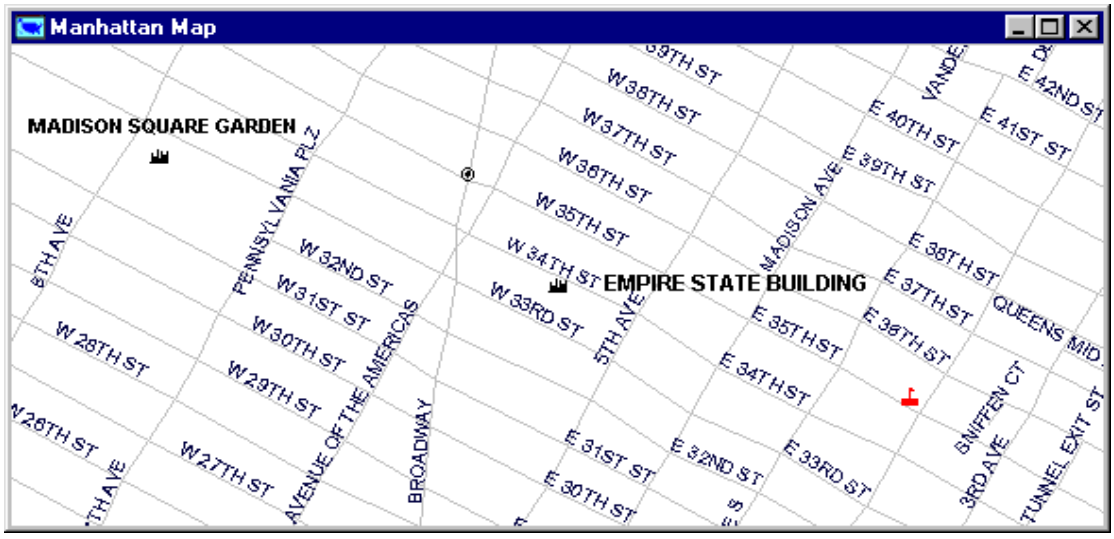
In this exercise you will learn how to:

- Create a 1/2-mile band (buffer) around an address on a map.
- Create an overlay to reveal demographic data within the area which the band covers.

These features help if you need to analyze demographics within specific distances of points of interest, counties, sections of streets, etc. This is a common need for regional planning.

Creating a Band or Buffer

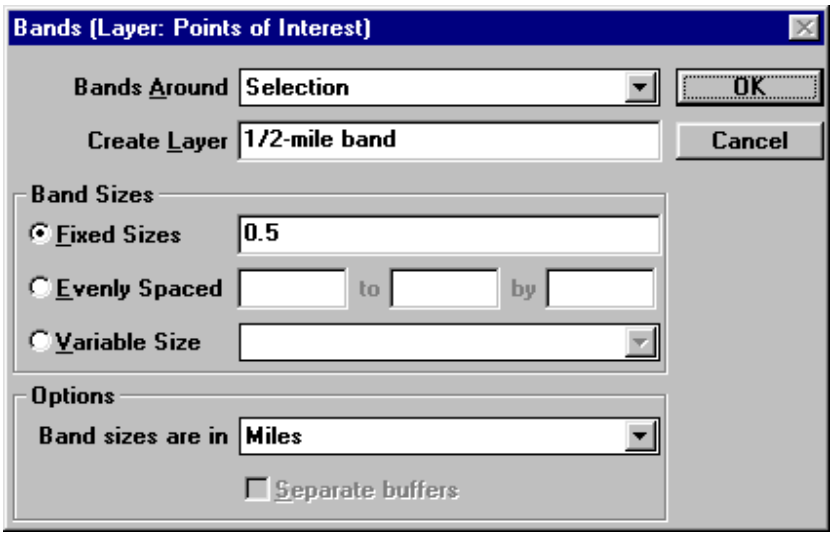
1. **Open a road map using the Empire State building as the location.**
   To do this, choose Other Location, General Purpose Maps, and Road Map from the HUD Map Library. In the Find dialog box, click in the button next to Landmark and type "Empire State Building" in the available space. ***Click OK.*** You will see a map resembling the following one:



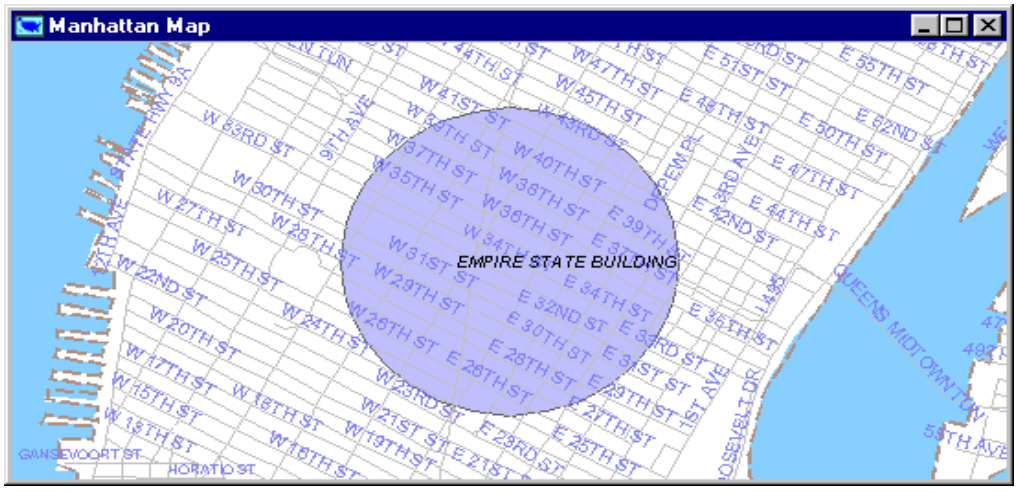
We want to determine the total population within a 1/2-mile radius of the Empire State Building, based on data from the last census.

2. **To continue, make sure that Points of Interest is the working layer. Click on the Select by Pointing tool**  **and click on the Empire State Building.** It should turn red.

3. Click on **the Create Bands or Buffers tool**  **and make the following selections in the dialog box** to create a 1/2-mile band around this landmark (notice that we changed the name of the band to "1/2-mile band"):



4. ***Click OK.*** The Save As dialog box appears. C2020 is preparing to create a geographic file (layer) consisting of the band around the landmark. You must indicate where you want the computer to store this file. **Type in a file name of your choice, such as "band.dbd," and store the file in the my-data subdirectory on the c:\ drive.** ***Click OK.*** The map will be redrawn and the layer with the 1/2-mile band will appear. After changing the map scale to 1:30,000 using the **Set-the-Map-Scale Tool**  and re-arranging map layers so that the band does not cover streets, the map should resemble the following one:



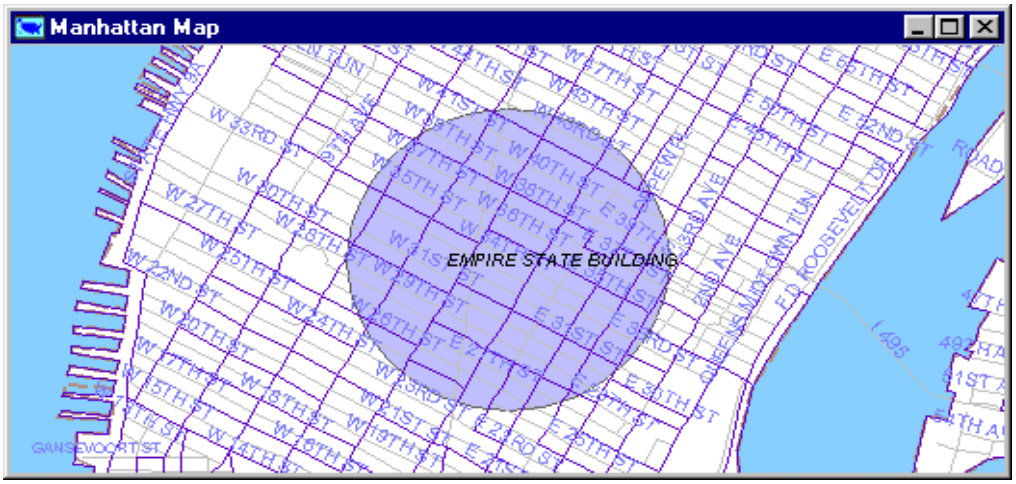
5. To determine the population within this band, you must add a layer to the map containing census data (for example, the Block Groups layer). C2020 will calculate population levels within the band

   by comparing the geographic region covered by the block groups to the area which the band covers. For instance, if the band covers the same territory that 20 block groups cover, then C2020 will determine the total population under the band by adding the populations of the 20 block groups.

   If a band cuts through one or more block groups, C2020 will perform calculations based on estimates. For example, if the band cuts through the territory of a certain block group such that 40 percent of the geographic territory of the block group is inside the band, then C2020 will estimate that 40 percent of the block group's population must also be inside the band. With this estimating procedure in mind, it's wise to add the Block Group layer to your map since it has the smallest geographic units containing census data.

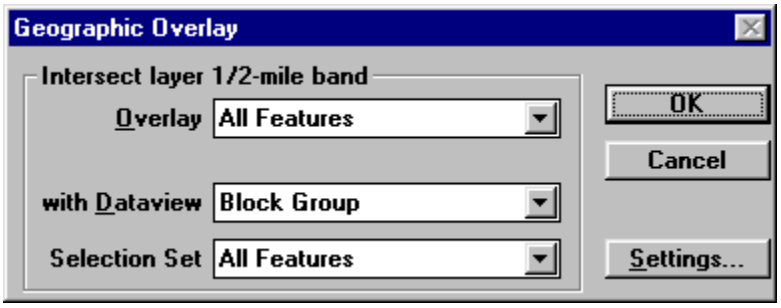
   Click on the Map Layers tool  and then **click on the Add Layer button.** The

   File Open dialog box appears. To add the layer that contains block groups, select the CD-rom computer drive and then **select the file ccbg.cdf. *Click OK.*** This layer will be added to your map and you will return to the Layers dialog box. ***Click on Close.*** Your map will be redrawn to look like the one below.



Creating an Overlay

6. Now you will use the **Overlay tool**  to analyze data within the portions of block groups that lie under the bands. To do this, **make 1/2-mile band the working layer,** then **click on the Overlay tool**  **.** The Geographic Overlay dialog box appears. To create a selection set of block groups that lie underneath the 1/2-mile band, make the following selections in the Geographic Overlay dialog box:



C2020 will generate statistical data based on its comparison of the geographic territories within the 1/2-mile band and certain block groups. (The Save As dialog box appears which asks for a file name to store the data it generated. Choose a new name such as *1-2mband* and store the file in the my-data subdirectory.)

7. C2020 generates a dataview that shows the statistics relevant to the 1/2-mile band. Scroll through the dataview and you will find the population information relevant to the area which the band covers. When finished, **close the map.**

Analyzing HUD Funding

Introduction

This section shows how to query the software in order to determine how and where agencies spend HUD funds nationwide. You will view forms containing data on HUD-funded programs and locate HUD-funded projects on maps.

Problem Statement

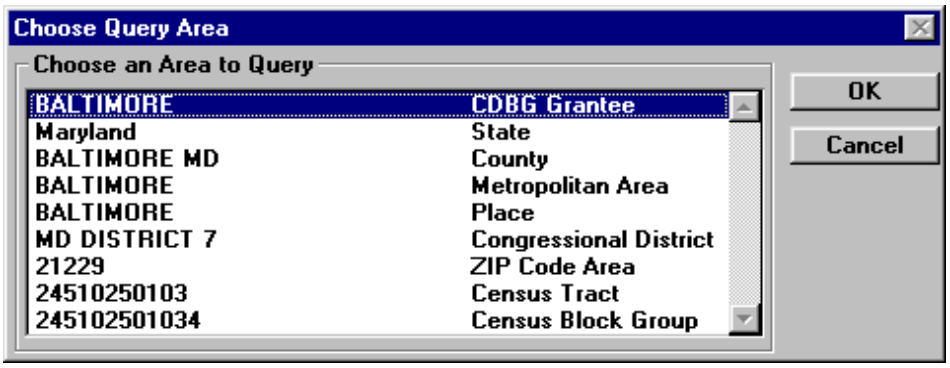
Let's pretend your boss asks you to prepare a presentation about the uses and distribution of HUD funds in recent years...and your presentation will be given before city council during budget hearings! It's an important task, so you decide to wow them by preparing maps and charts of all the area's HUD-funded activities. Using C2020 Planning Software, how do you begin to access the data and prepare the maps?

Using the HUD Query Area Button

Your Steps:

1. **Click on the Map Library button** and make the following selections:
   - **Location: Baltimore**
   - **Category: General Purpose Maps**
   - **Map: Area Map**

   Then ***Click OK.***
2. **Click on the HUD Query Area button**  in the HUD toolbox.
3. With the HUD Query Area button activated, **choose a point on the map within the City of Baltimore, then double-click on the point.** The Locating Features screen appears as the software searches for all the geographic designations with jurisdiction over your selected location. When the search is completed, it brings up the Choose Query Area dialog box (shown below) with a list of markers at different map scales relevant to the chosen point.



4. **Choose Baltimore, CDBG Grantee** as the geographic designation to query.

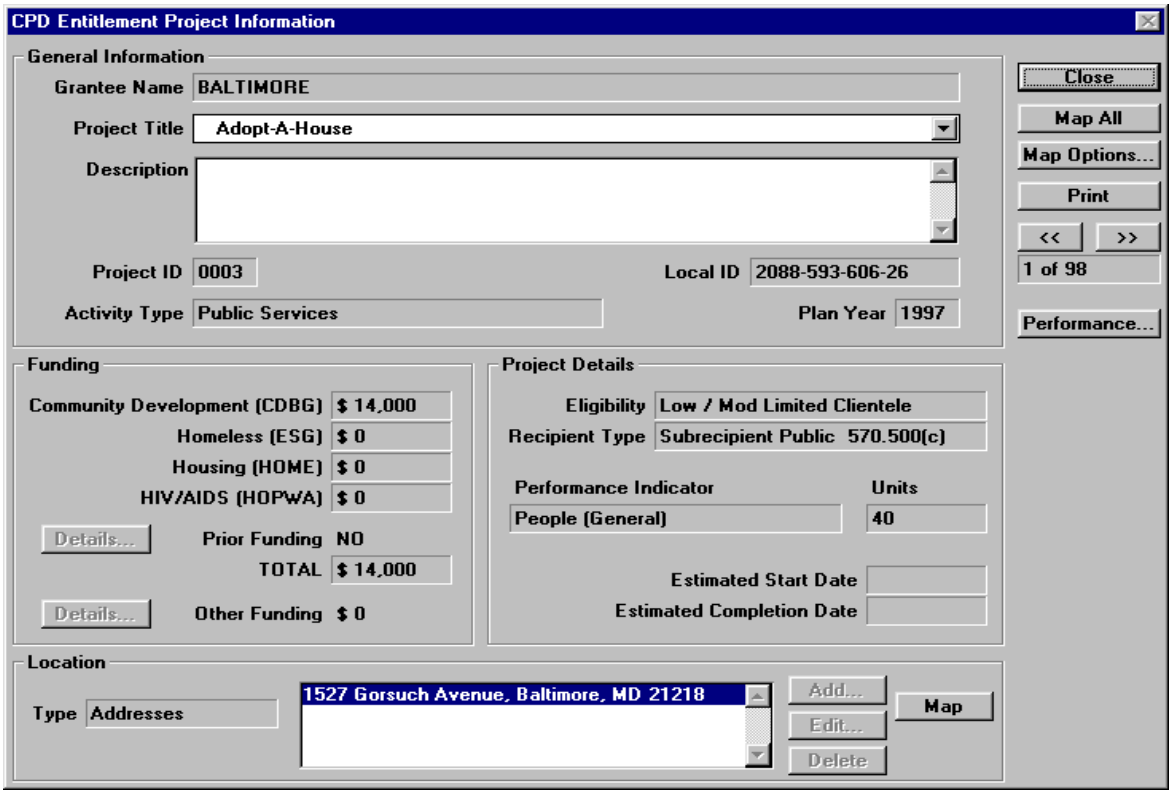
5. ***Click OK.*** The HUD Program Query Builder screen will appear.

6. Make the following choices at the top of this screen:
   - Under Choose Year(s), ***select From 1997 To 1997.***
   - Under Choose Program(s), ***select CPD Entitlement.***
   - Under Choose Activity Type(s), ***click on the All button.***
   - Under Choose Method, ***select the By Area radio button.***

When you choose the By Area Method, you're not required to indicate a specific agency. However, your query results will not include the activities lacking specific geographic information, e.g. street addresses, intersections, etc. **Click on the Apply button in the top right part of the screen.** After the query is complete, the HUD Program Query Builder dialog box appears and illustrates the results of the query. **Click on the All button** at the lower left to select all the CPD activities. All become highlighted in blue.

The lower half of the HUD Program Query Builder screen displays the results of your query. All the buttons below the Query Results act upon the selected activities. For example, clicking on Print will result in printing out a table of all selected activities.

7. **Click on the Details button** Details... located at the bottom left-hand side of the HUD Program Query Builder screen. The CPD Entitlement Project Information dialog box will appear as shown below:



8. Note there are 98 projects mentioned on the right hand side of the screen. These projects can be viewed in two ways:
   - **Click on the Previous button** << **or the Next button** >> to view the projects sequentially.

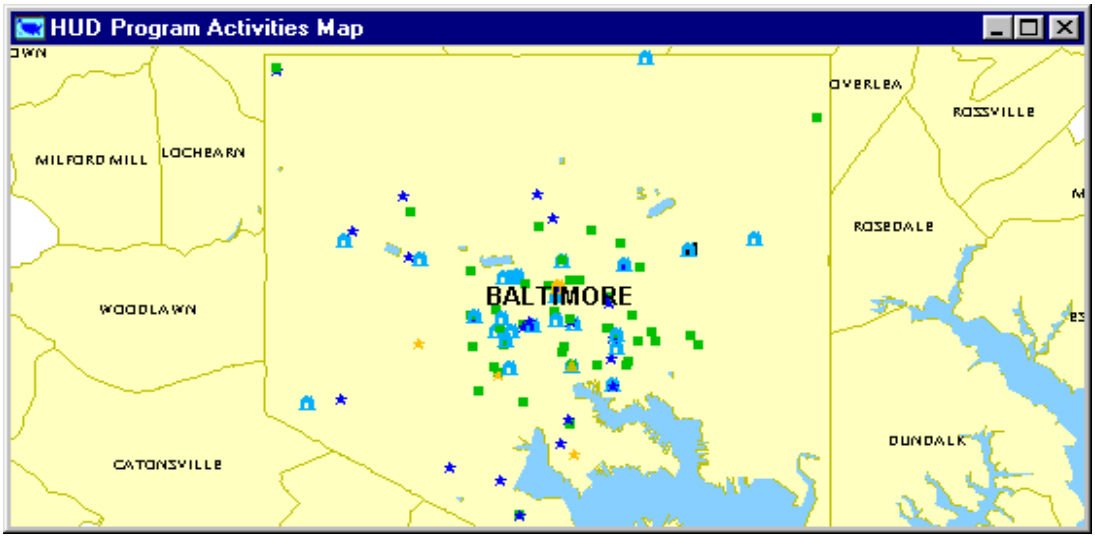
Click on the Project Title dropdown button to view a specific project alphabetically.

9. **Click on the Performance button**  to view the current funding status and accomplishments of the project.

10. ***Click on the Close button*** on the Performance screen to return to the CPD Entitlement Project Information screen. **Click on the Close button** on the CPD Entitlement Project Information screen to return to the HUD Program Query Builder screen.

11. **Click on the Map button** on the HUD Program Query Builder screen. The **Selecting Activities** status window appears as the software gathers the information about each 1997 CPD Entitlement Project. After the map is displayed, the **Confirm dialog box** appears and asks whether you want to return to the HUD Program Query.

12. **Select No**, because you will not use the query again for this exercise. A map of the Baltimore area will appear displaying the 1997 CPD Entitlement Project locations, as shown below:



13. **Click on the Activity Info button**  **and click directly on any icon on the map.** The CPD Entitlement Project Information form will be displayed to show the information for that project.

14. ***Click on the Close*** button to return to the map. Then select **File, Close All** from the menu.

Displaying CPD Entitlement Data

Grantees receive HUD grants under different entitlement programs. C2020 users can take

take advantage of the **CPD Entitlement Data button**  to access data for a specific grantee of CDBG, ESG, HOME, and HOPWA grants, viewing details about a specific grantee, and viewing information screens for each grantee's projects. To perform these functions and gain access to an assortment of information regarding a CPD entitlement city's or county's Consolidated Plan, **click on the CPD Entitlement Data button**  in the HUD toolbox. **Type the first few letters of the grantee's name** in the given text box ("balt", for example), then **hit Tab or Enter.** (Note: you may also **enter the two-letter State abbreviation** in the State field and press Tab to see a list of all grantees within a State.) Next, **click on the name of the Grantee** from the menu of choices which will appear. You can now use several buttons on the right of the new screen which will appear to obtain detailed information about this grantee and the projects which it has administered. You can click on the 

button to see a map of this CDBG grantee.

Public Housing Authorities and Developments

The C2020 software contains data on public housing authorities (PHAs) and the Federal programs they manage. These locally operated PHA's manage a variety of programs to maintain their housing units and to provide services at development sites. Two major types of programs run by PHA's are the conventional Public Housing program and the Section 8 program.

The software contains the **Public Housing Data button**  , which allows users to see an array of data on all PHA's. Users can use this button also to view information about every PHA development and to map all PHA developments. This button functions in a very similar fashion to the **CPD Entitlement Data button**  .

Displaying State/Small Cities Project Data

State and Small Cities projects are funded by CDBG grants to the State government for nonentitlement areas. You can look at the project data on a form for some or all of the projects for nonentitlement areas.

Users can use the **State/Small Cities button**  to display State and Small Cities project data and to view information for a specific project funded through this program.

Nonentitlement areas are identified by place name. You can use this button to look at projects for one or more places. You can also limit the projects to a certain year or activity.

This button also functions in a very similar fashion to the **CPD Entitlement Data button**  .

Displaying EZ/EC Data

C2020-HUD also provides data on Empowerment Zones and Enterprise Communities (EZ/ECs). The software can display locations of EZ/EC areas and activities therein on a map. The software can also provide detailed information about organizations that administer EZ/EC programs and activities.

The software also contains an EZ/EC Locator button to determine whether a particular address is located within an Empowerment Zone or an Enterprise Community. This can be very helpful for employers who can be eligible for tax credits by opening businesses or hiring employees from within these areas.

In this exercise you will learn:

- How to use the **EZ/EC Data button**  to display information about a specific EZ or EC.
- How to access information about specific activities of an EZ or EC.
- How to determine if a specific address is inside an EZ or EC using the Locator button.

Viewing Information on EZs and ECs

Your Steps:

1. **Click on the EZ/EC button**  to display the EZ/EC Information dialog box. This dialog box contains a list of EZs and ECs.

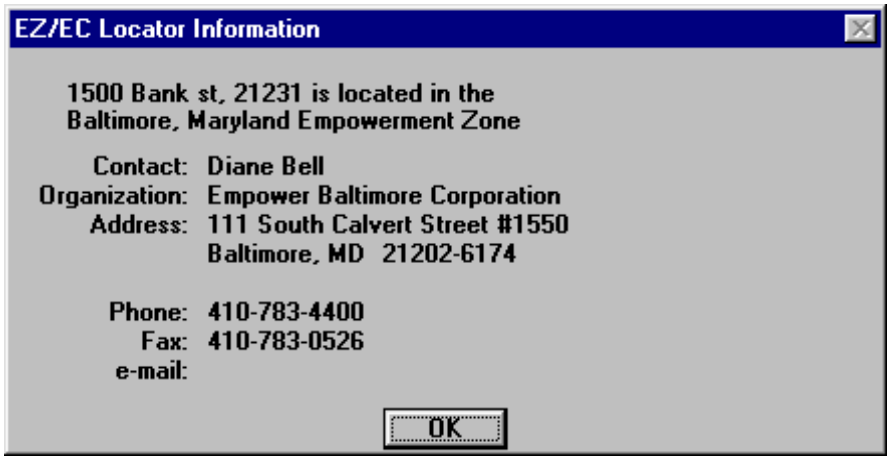
2. **Click on Baltimore, Maryland, and choose the program year 1997.** You can now use the buttons at the right to get information about this EZ.

3. **Click on the Details button** to bring up the Detailed Information form. This form provides city organizational information. **Click on the Map button** on this form to display the boundaries of the Zone drawn on a map of the city. **Select Yes** in the Confirm dialog box after reviewing the map, then **close** the Detailed Information dialog box.

4. **Click on the Activities button** to bring up the EZ/EC Activity Information form to display information about EZ/EC activities. **Click on the Map All button** on this form to display the location of these activities within the boundaries of the Zone drawn on a map of the city. After reviewing the map, **click on Yes** in the Confirm dialog box, then **close** the EZ/EC Activity Information dialog box.

5. The EZ/EC locator allows you to determine whether a specific address lies within a federally designated EZ/EC. This determination may help you find out if you qualify for certain tax credits.

   Click on the Locator button to bring up the EZ/EC Locator dialog box. **Enter the following street address and ZIP Code: "1500 Bank St., 21231." Then click on the Locate button.** A map will appear showing this location and surrounding areas. If the selected address is located within an EZ/EC area, you will see the contact information as shown below. If not, a different message box will appear indicating that it is not.



6. **Click OK. Select File, Close All.**

You have now learned the basics of a C2020 HUD Program Query! Not only do you have the ability to find all HUD-funded activities, but you also have access to specific HUD program information, including all the facts and finds of CPD Entitlement city and county Consolidated Plans, public housing, CPD State and small cities, and ECs and EZs.

CONGRATULATIONS!

You have now experienced the basics of Community 2020! But remember, this is a just streamlined demonstration guide designed to give some insight into the elementary features of C2020--there's so much more this software offers! If this demonstration guide has caught your interest and you would like formal training, or if you realize the possibilities of using C2020 in your office, we encourage you to call us at 1-800-998-9999 or check out our Web page at:

www.hud.gov/cpd/2020soft.html.

HUD TOOLS AT A GLANCE:

Activity Info 

Automatic Label 

Chart Theme Map Wizard 

Create Bands and Buffers 

CPD Entitlement Data 

EZ/EC Data 

Find 

Freehand Text 

HUD Program Query 

Manual Label 

Map Layers 

Map Library Button 

New Dataview 

North Arrow 

HUD TOOLS AT A GLANCE:

Overlay 

Pan 

Pointer 

Public Housing Data 

Select by Pointing 

Setting Markers 

State/Small Cities Data 

Style 

Zoom In 

Zoom Out